



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,586	04/16/2004	David L. Gothard	0004.000008US	1757
33422 7590 09/02/2009 GOODMAN, ALLEN & FILETTI PLLC 4501 HIGHWOODS PARKWAY SUITE 210 GLEN ALLEN, VA 23060				
EXAMINER				
DUONG, THOI V				
ART UNIT		PAPER NUMBER		
2871				
MAIL DATE		DELIVERY MODE		
09/02/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,586

Applicant(s)

GOTHARD, DAVID L.

Examiner

THOI V. DUONG

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-27 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-27 and 29-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 11, 2009 has been entered.
2. According to the amendment filed June 30, 2009, claims 16-19 were amended, claims 1-15 and 28 were cancelled, and new claims 30-37 were added. Currently, claims 16-27 and 29-37 are pending in this application.

Response to Arguments

3. Applicant's arguments with respect to claim 16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16, 17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708) and Karras (US 2003/0223247 A1).

Re claim 16, as shown in Fig. 3, Ochiai discloses an illumination apparatus for LCD displays to provide such displays with high intensity backlighting lights and providing a uniform display comprising:

a first panel 2 (light guide plate) containing a plurality of high intensity light sources (col. 2, line 66 through col. 3, line 7; col. 3, lines 61-67; and col. 8, lines 40-43);

a diffuser panel 36 (diffusing plate) placed in front of said first panel 2 for further uniformizing the diffracted light, (col. 7, lines 59-67); and

a LCD display panel 40 placed in front of said diffuser panel 36 and being illuminated by the light from the diffuser panel to thereby provide an illuminated LCD display (col. 7, line 57 through col. 9, line 13).

Ochiai discloses that the diffracted light that has passed the diffusing plate 36 is further uniformized, thus illuminating the liquid crystal display panel 40 with great uniformity and high brightness (col. 8, line 65 through col. 9, line 2 and col. 12, lines 28-38). Accordingly, it is obvious that the diffuser panel is placed in front of the first panel to soften light and provide a uniform appearance.

Ochiai discloses an illumination apparatus for LCD that is basically the same as that recited in claim 16 except for LCD/organic display.

Onishi discloses a LCD device comprising liquid crystal materials which are organic mixtures exhibiting a liquid crystal state at room temperature and the vicinity thereof (col. 11, lines 10-29). Accordingly, the LCD device of Onishi is an LCD/organic display.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a LCD/organic display panel in the illumination apparatus of Ochiai as taught by Onishi in order to improve the display characteristics of the display (col. 6, lines 13-21).

Further, Ochiai as modified in view of Onishi does not disclose the plurality of high intensity light sources surrounded by a white background.

As shown in Figs. 1-3 and 8, Karras discloses an illumination apparatus comprising a plurality of LEDs 26 surrounded by a white background 34 (white tape strip) (paragraph 35).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD/organic display panel of Ochiai by forming a white background surrounding the plurality of high intensity light sources in order to reflect and scattering the maximum amount of illumination radially (paragraph 35).

Re claim 17, Ochiai discloses that the high intensity light sources on the first panel are LED lamps 5 (light-emitting diodes) (col. 6, lines 45-54).

Claim 30, which includes the limitations of claims 16 and 17, is also rejected.

6. Claims 18, 19, 22-27, 31 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708) and Karras (US 2003/0223247 A1) as applied to claims 16, 17 and 30 above, and further in view of Shimada et al. (Shimada, US 6,020,867).

Re claims 18, 19 and 31, the illumination apparatus for LCD/organic displays of Ochiai as modified in view of Onishi and Karras above includes all that is recited in claims 18 and 19 except for a cover placed in front of said LCD/organic display panel for protection of the display.

As shown in Fig. 148, Shimada discloses a LCD apparatus comprising a backlight unit 530, a diffuser panel 239 (diffusion plate), a LCD panel P, and a cover 242 (face plate) placed in front of the LCD panel P to protect the LCD panel P (col. 11, lines 4-11 and col. 61, line 59 through col. 62, line 20).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai with the teaching of Shimada by forming a cover placed in front of said LCD/organic display panel in order to protect the LCD panel from intrusion of dirt onto the surface of the LCD panel (col. 11, lines 8-11 and col. 62, lines 12-20).

Re claims 22-27 and 33-36, as shown in Figs. 89 and 90, Shimada also discloses that the diffuser panel 239 disposed in front of the backlight unit 530 may be formed of a transparent member such as polycarbonate or glass in order to provide a large area planar distribution showing a high luminance and a good viewing angle characteristic (col. 37, line 52 through col. 38, line 5; and col. 38, lines 29-32).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai by employing the diffuser formed of polycarbonate or

glass as taught by Shimada in order to realize a high luminance and a good viewing angle characteristic for the display (col. 38, lines 29-32).

7. Claims 20, 21 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708), Karras (US 2003/0223247 A1) and Shimada et al. (Shimada, US 6,020,867) as applied to claims 18, 19, 22-27, 31 and 33-36 above, and further in view of Holmes (US 4,243,719).

Shimada discloses that the cover 242 is made of a reinforced glass (col. 19, lines 13-17); however, Shimada does not disclose that the reinforced glass of the cover is clear (transparent) polycarbonate glass as recited in claims 20, 21 and 32.

As shown in Fig. 4, Holmes discloses a process for forming a reinforced glass laminate comprised polycarbonate (clear polycarbonate glass), which is useful as an impact and scratch resistant display screen for a display using LEDs (col. 14, lines 14-31).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai with the teaching of Holmes by having a cover made of clear polycarbonate glass in order to obtain an excellent transparency and impact resistance as well as a good resistance to surface damage by external agents (col. 1, lines 4-9 and col. 14, lines 25-31).

8. Claims 29 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708) and

Karras (US 2003/0223247 A1) as applied to claims 16, 17 and 30 above, and further in view of Nishio et al. (Nishio, US 5,592,332) and Chen (US 5,825,553).

The illumination apparatus for LCD/organic displays of Ochiai as modified in view of Onishi and Karras above includes all that is recited in claim 29 except for a Frenzel lens panel placed between the first panel and the diffuser panel.

At first, as shown in Figs. 8, 10 and 20, Nishio discloses a surface light source 40 comprising a first panel comprising a light guide plate 42 and light sources 43, a diffuser panel 20 (light isotropic diffusing layer), and a lenticular lens 10 placed between the first panel and the diffuser panel 20 (col. 11, lines 13-29), wherein, as shown in Figs. 40A and 41A, the lenticular lens is formed such that the spherical aberration of the lenticular lens is removed and the light collecting loss is minimized (col. 21, lines 19-35).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai with the teaching of Nishio by using the lenticular lens panel to minimize spherical aberration and hence, the light collecting loss (col. 21, lines 19-35).

Further, as shown in Fig. 2, Chen discloses an optical system comprising a refractive lens 16 using a Frenzel lens on the surface of the lens or as a stand alone element so as to further reduce chromatic aberration (col. 3, lines 57-64).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for

LCD/organic displays of Ochiai with the teaching of Chen by using an additional Frenzel lens panel in order to further reduce the chromatic aberration (col. 3, lines 60-64).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

/Thoi V. Duong/ - Primary Examiner

August 28, 2009